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able. As the case is similar to others which have to be decided one way or the other, it is worth while to discuss it briefly.

Schlegel in 1846 described a fish from Japan as *Monacanthus oblongus*. It turned out, however, that his description really covered two entirely different fishes. The description of the adult related to a *Pseudomonacanthus*, that of the supposed young, and also the figure, to a *Stephanolepis*. Now, I should say that in such a case the description purporting to relate to the adult fish should go with the name, although as a matter of fact the alleged young may also have been adult. This would be because (1) the author's conception of the species would surely be primarily based on the adult, and (2) the description of the adult presumably would in all such cases have priority of place over that of the supposed young or of the plate figuring the latter.

Supposing, however, that these contentions are not held valid, I would then say that the first name given to one of the two species should hold, the residue (*i. e.*, the other species) carrying the original name. Now it happens that the first new name given was *Monacanthus Broeki*, Bleeker, 1857.\* This name pertains to Schlegel's supposed young, so on both counts the name given by Schlegel belongs to the fish described as adult. Nevertheless, Dr. Jordan and Mr. Fowler, following Dr. Günther, give the Schlegelian name to the fish described as the young, and call the other by Günther's name, *modestus*, proposed as late as 1877. According to my view, the fishes should be:

1. *Stephanolepis Broeki* = *Monacanthus Broeki*, Bleeker.

2. *Pseudomonacanthus oblongus* = *Monacanthus oblongus*, Schlegel (part); = *M. modestus*, Günther.

It is also to be remarked that the name *oblongus* is more suggestive of the latter than of the former fish, judging from the figures.

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\* According to Jordan and Fowler, *M. frenatus*, Peters, 1855, is possibly applicable; if so, it is an earlier name for the same fish.

#### COMPARATIVE STRENGTH OF ANIMALS.

TO THE EDITOR OF SCIENCE: In the letter entitled 'The Strength of Ants,' in your issue of September 26, it was observed that an ant weighed 3.2 mg. and a grasshopper which it was dragging weighed 190 mg. If one desires to magnify the ant and calculate the corresponding strength which might be expected, it appears that if the animal be doubled in lineal dimensions its weight will be multiplied by the cube of two or 8, while its strength, which is doubtless determined by the cross-section of its muscles, will be multiplied by the square of two or 4. Now suppose that this small animal is multiplied in size 300 times in length and correspondingly in breadth and height, so that its weight will approximate to 3.2 mg. multiplied by 300 cubed = 86.4 kg. Whereas if its strength is represented by a weight of 190 mg., this multiplied by 300 squared = 17.4 kg. These figures will correspond to a man weighing 190 pounds dragging 38.5 pounds, a proportional strength with which we are very familiar.

F. P. DUNNINGTON.

UNIVERSITY OF VIRGINIA,

October 20, 1902.

#### A BIOGRAPHICAL INDEX OF THE MEN OF SCIENCE OF THE UNITED STATES.

At the request of the executive committee of the Carnegie Institution I am compiling a biographical index of the men of science of the United States. It is intended in the first instance for the use of the institution, but it will probably also be published. The index should include all those who have carried on research in science, the term, however, being used in its narrower sense so as not to include on the one hand philology, history, economics, etc., nor on the other hand medicine, engineering, education, etc., except in so far as these applied sciences may contribute to pure science.

During the summer I sent to a large list of names (some 8000) a blank with the request that it be filled in and returned. The blank asked more especially for information in regard to the scientific career and work of those to whom it was addressed. The re-

sponse has been very gratifying, but as the circular was sent with a one cent stamp, it did not reach immediately some of those absent from home during the summer holidays. I shall be glad if those who have received this blank will fill it in and return it to me. It will be necessary to send a second request by letter postage to those who have not replied; but time and money will be saved if those who see this note will be so kind as to fill in and return the blank in case they have not already done so.

The list of those to whom the blank was sent was compiled with care, and includes the members of the scientific societies of the United States requiring research as a qualification (some fifty), the scientific staffs of the leading institutions of learning (some seventy), the scientific men included in 'Who's Who in America' and others whose names were accessible. There are, however, many connected with smaller institutions and in private life, not members of scientific societies, who have published research work of value, and I shall be glad to have assistance in securing their names and addresses. I shall be under obligations to any readers of this journal who have carried on research in the sciences, but who have not received the blank, if they will send me their names; and I shall be glad to receive the names and addresses of any who have carried on research, but whose names would not be discovered from the lists of societies, larger institutions of learning and existing biographical dictionaries.

J. McKEEN CATTELL.

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#### SHORTER ARTICLES.

##### THE PARASITISM OF CEPHALOTHECIUM ROSEUM.

In discussions of the numerous fungi that are known to cause the rotting of apples and other fruits *Cephalothecium roseum*, Corda, has had but brief mention. It is generally regarded as a saprophyte, and Clinton\* reports it as such on badly rotted apples. However, Ader-

\* Clinton, G. P., 'Apple Rots in Illinois,' Ill. Agr. Exp. Station Bul. 69: 193. F. 1902.

hold\* observed a case in which it caused a rotting of pears by growing through *Fusicladium pirinum* spots. But it has never been classed as a rot fungus of any economic importance.

In New York State during the past season it has proved to be a true parasite and the cause of an apple rot of great economic importance. In some sections of the State thousands of barrels of apples have been ruined by it. Apple scab, *Fusicladium dendriticum*, has been unusually common this year. In September and October it was noticed that on many of the scab spots there appeared a white or pinkish growth which transformed them into brown, sunken, bitter, rotten spots. Upon investigation it was found that this white growth was *Cephalothecium roseum*, Cda., and inoculations made upon many different varieties of apples and pears under anti-septic conditions, with pure cultures, have proved that it is parasitic, and the cause of the rot. In every inoculation the characteristic rot developed while the same number of check fruits remained sound.

The common occurrence of this fungus upon the *Fusicladium* spots while it is wholly absent from other portions of the fruit is due to the fact that *Fusicladium* ruptures the epidermis and thus furnishes a means of entrance for the *Cephalothecium*, which could not otherwise attack the fruit, since it appears to be incapable of penetrating the unbroken epidermis.

It is often found on apples while still on the trees; but after they have been harvested and left in piles on the ground or barreled and allowed to remain where the sweating process can take place, it has become so abundant on certain varieties as to ruin the fruit for storage.

Further investigations are in progress; and when completed they will be published in a

\* Aderhold, Rud., 'Arbeiten der botanischen Abteilung der Versuchsstation des Kgl. pomologischen Instituts zu Proskau,' Centralbl. f. Bakt. Parasitenk. u. Infektionskr., II. Abt., 5: 522. 1899.